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VOLUME 51

NUMBER 1



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# CLINICAL MEDICINE

VOLUME 51

JANUARY, 1944

NUMBER 1

## Progress of Cholecystography and Biliary Tract Physiology

By HOWARD CURL, M.D.

From the Division of Anatomy, University of Tennessee, Memphis

Dr. Curl describes a new, simple technic for improving gall bladder diagnosis with the X-ray that should be known to all who perform such examinations or refer the patient. The present day knowledge of gall bladder function is also summarized.

THE announcement in 1924 of the development of a radiopaque medium by which the gall bladder could be visualized gave new impetus to the study of cholelithic disease and heartened greatly those of us who had been striving, by means of x-ray, to diagnose pathological conditions of that organ. The development of this opaque dye was not the result of an accidental discovery. Radiopaque materials for the examination of all other hollow viscera of the body were already in use. Many months were consumed, and many materials tried, before a relatively non-toxic, highly radiopaque salt was found which, when given intravenously, would be eliminated through the biliary system. Very shortly another new and still less toxic salt was developed, and a technique was devised whereby the opaque medium could be given by mouth. Its adoption by roentgenologists was immediate and almost universal.

With the announcement of a method for direct roentgen visualization of the gall bladder the pendulum swung far—but never too far. No exaggerated claims were made; nothing was promised that did not have a high probability of being fulfilled. A competent roentgenologist

could promise, no more and no less, to differentiate with a high degree of accuracy the physiological from the pathological gall bladder. That he did not always do so was not a fault of the method nor was it wholly the fault of the roentgenologist; it was rather a fault of the time. The roentgenologist, the physiologist, the surgeon and the internist, none was basically prepared; we did not know the physiology of the gall bladder.

There is no intention to distract from or to minimize in any way the part, no matter how small, that was contributed by any worker (and there were many) to the development and perfection of a most valuable method of cholelithic diagnosis and the evolution of a concept of biliary tract physiology. They progressed almost hand in hand. One cannot be separated from the other except that in the beginning cholecystography led the race.

### Previous Ignorance

Looking back dispassionately, as we can now, over the past 20 years, it seems amazing that so much could be done in the way of developing a method of examination of an organ, about which we knew so little; but at the birth of cholecystography we knew nothing, literally nothing, about the physiology of the gall bladder and cystic duct. Two months before the publication of the preliminary report of cholecystography, a professor of surgical research in a large medical school stated emphatically that it was his belief that nothing ever left the gall bladder by way of the cystic

duct. A year later a prominent physiologist asserted that he was positive that gall bladder bile played no part in digestion and that food had no effect on gall bladder motility; and a prominent internist evinced the belief that respiration, by increasing interabdominal pressure, was the motor of the gall bladder. More amazing still is the assertion made eight years later by a roentgenologist that the gall bladder was incapable of self evacuation.

#### History

Some physiological observations had been made prior to this time but it is doubtful if they had been widely read, certainly not accepted, by either physiologists or clinicians. Probably the first to note that it was fat and not protein or carbohydrate that caused the flow of bile into the duodenum were two students of Pavlov as early as 1899. In 1905, the ability of the gall bladder musculature to contract, after faradic stimulation, was demonstrated and in 1921 the concentrating function of the gall bladder mucosa and the mechanism of the development of biliary stasis were also amply demonstrated. By direct observation, in 1923, the effect of foods on the gall bladder of cats was studied. Human cholecystography not only confirmed but added to these observations and led to the conclusion that fat and no other food would cause complete evacuation of the gall bladder.

The first five years, after the introduction of cholecystography as a diagnostic procedure, saw one step in the evolution of the physiology of the gall bladder definitely established. Of the three basic foods, the product of fat digestion alone was shown to be essential for the liberation of the hormone, cholecystokinin, which is responsible for the contraction of gall bladder musculature.

During the ensuing years, step by step and bit by bit, pertinent observations have been made. Although the work is not complete, we can now draw a fairly accurate picture of the physiology of the gall bladder and the biliary cycle. Before this is done, however, one or two points about the anatomy of the gall bladder and cystic duct should be emphasized.

It is important to remember that in the early embryo there is no gall bladder or cystic duct, the extrahepatic bile ducts extending directly from liver to duodenum. Later these structures develop as a diverticulum and as a diverticulum they remain, like the vermiform appendix, through life. Although the gall bladder has a specific and very important function to perform, it may be removed, like the vermiform appendix,

without serious impairment of health. The only ingress and egress of bile is through the cystic duct. These points are essential for the explanation and understanding of biliary tract physiology.

#### Physiology

With these few points in mind, the physiology of the biliary tract may be briefly stated, remembering that bile is absolutely essential, if not to the digestion of fat at least to its absorption. It is understood, of course, that bile is of complex composition and comes from many sources but insofar as oral cholecystography is concerned we start with the absorption of the opaque medium from the duodenal mucosa. It is carried to the liver through the portal circulation; is passed into the biliary radicles by a secretory pressure of from 200 to 300 mm. water pressure, and on into the main (hepatic and common) bile duct. A sustained contraction of the sphincter of Oddi, equivalent to 150 mm. water, prevents the bile from entering the duodenum but it can pass through the cystic duct into the gall bladder against a pressure of only 50 to 70 mm. water. In the gall bladder, the fluid is rapidly removed by the absorptive power of the mucosa. This does two things: It maintains the intraductal pressure at about 100 mm. water or less, and it reduces the volume of incoming bile to the extent that the gall bladder can, without over distention, contain the entire liver output for a 24 hour period. At the end of such a period, the gall bladder is filled with thick, tarry, mucinous concentrate of bile salts, pigment and mucin.

The gall bladder, upon proper stimulation, is capable of self evacuation; developing a maximum contraction pressure of 250 mm. of water. As has been previously stated, fat is the only food which will bring about this evacuation. This is quite logical when we remember that the only proven function of bile is to aid in the digestion and absorption of fat.

Thus we see not only a complete physiological biliary cycle, from duodenum to duodenum, but we can also see the mechanism for the production of a physiological biliary stasis. If the cystic duct is occluded, or if the gall bladder is filled with stasis bile to the point where it can no longer receive liver bile, it has become as effectively removed from the biliary system as if it had been removed by surgery. Fortunately for the patient, essential if not entirely adequate compensation can be made by the dilation of the bile ducts and the biliary radicles. It is imperative that these facts

be understood if we are to see and correct the failures in cholecystography.

Cholecystography was off to a flying start. It was half way around the track before physiology left the mark, and by the end of three years it led by three-fourths of a lap. In the beginning, the relation of food to gall bladder motility was given no consideration. It was taken for granted that the gall bladder, if normal, would fill and would empty. How? Well, there were many theories and one guess was as good as another. After a light evening meal in which protein, but not fat, was excluded from the diet the patient fasted until after the roentgen examination 14 to 16 hours later. If the gall bladder was not visualized, it was considered pathologic. If the gall bladder was visualized the patient was permitted to resume his regular diet, further observations being made. If the gall bladder was still visualized, as it sometimes was, at 24 or 48 hours it too was considered pathological.

Then came fat. Physiology had left the mark. When it had been demonstrated that fat would cause evacuation of the visualized gall bladder, fat was given a prominent place in the cholecystographic routine.

#### Standard Technic Today

Fat was excluded from the pre-examination diet but became almost obligatory after gall bladder visualization. The viscus was still assumed to be always receptive to liver bile. The motor meal, after visualization, has now been discontinued by many. Two prominent roentgenologists, one a pioneer in cholecystography, declare that its use has never added anything to diagnostic accuracy.

#### Results

The above method is not entirely bad. Some of the leading roentgenologists, with a large volume of clinical material and a well trained technical staff, have demonstrated a diagnostic accuracy of better than 97 percent. Very few have done as well, many have done worse, and some, who are attempting to do cholecystography without adequate facilities, would not do well with any method. The regrettable feature is that, in many instances, the internist and especially the surgeon have lost faith in the method. They are convinced that the pendulum did swing too far. It is embarrassing to open an abdomen, after receiving a report of "pathological gall bladder" or "a non-functioning gall bladder," only to find a perfectly healthy organ; still more so if, after removal, the pathologist says "no evidence of pathology."

#### Heavier Dosage

The most definite evidence that roentgenologists themselves recognize the inadequacy of this method is the numerous suggestions for a change in cholecystographic technique. These for the most part have been for an increase in the dosage of the opaque medium. The amount usually used, the average dose, is 3.5 to 4 gm. of tetriothalein sodium given in a single dose. Suggested increases have been 5 gms. for a single dose, 7 to 9 gms. in two doses, 10, 12, 14 and 15 gms. in three doses and finally (1942) up to 25 gms. given in multiple doses over a period of two days.

The basis for an increase in the dose is the fact that frequently, following the ingestion of the medium, unabsorbed dye is observed in the colon. This was especially true in the early days of oral administration when the dye was given by capsule, some of the capsules passing through unbroken. The ever increasing size of the dose lends weight to the belief that liver bile containing the opaque dye cannot enter a gall bladder which is already filled with concentrated stasis bile. Other workers have commented on the ability to fill the gall bladder in a 150 pound patient with 40 gr. of the dye, and in my own physiological studies, where the gall bladder had been recently emptied, I have repeatedly obtained excellent shadows in patients weighing 180 to 200 pounds with 2.5 gms. of the dye.

Another evidence of dissatisfaction with the usual cholecystographic technique is the rather extensive practice among roentgenologists of re-examining all negative shadow cases not giving a frank history of cholelithic disease. Without any directed change in diet a surprising number of these will give positive shadows on the second examination. The intravenous administration gives no more positive shadows than the ingestion method, so it cannot be a question of absorption. It is entirely possible that a breakfast of country eggs and bacon may have tipped the scales to the positive side. Had the gall bladder been evacuated in preparation for the first examination, most, if not all, of the re-examinations would have been unnecessary.

In my own studies on the clinically physiological gall bladder, carried on for the past three years, more than 400 medical students have been examined. The following brief summary will show the effect of the various dietary factors on the cholecystographic results.

1. No alteration in the regular diet. Allowed to eat the evening meal as it came to the table. Negative cholecystograms 14 per cent.
2. Regular diet up to the evening meal preceding the ingestion of the dye. "Fat Free" evening meal. Negative cholecystograms 28 per cent.
3. No alteration in the regular diet before ingestion of dye as in No. 1 above. Allowed "fat free" breakfast the following morning before x-ray examination. Negative cholecystograms 18 per cent.
4. "Fat Free" evening meal as in No. 2 above, before ingestion of dye. "Fat Free" breakfast next morning before x-ray examination. Negative cholecystograms 26 per cent.
5. All obvious fat excluded from the diet for a period of three days preceding the examination. Negative cholecystograms 44 per cent.
6. Regular diet up to and including evening meal before the ingestion of the dye, but the fat in evening meal reinforced by egg yolk and lecithin—negative cholecystograms 2 per cent.

If the results of these studies have been correctly interpreted and if the concept of gall bladder physiology here presented is correct, then it is easy to understand why the surgeon so frequently finds the gall bladder distended and is unable to express its contents manually. Especially is this true, when his patient has been hospitalized and on a restricted diet for several days and with no food at all for several hours before the operation. It also explains the frequent biliary complications of those conditions in which the patient is unable to take and retain fat food or in which the diet is greatly restricted.

#### Fat Feeding Before X-Ray

Reinforced fat feedings before cholecystography have been criticized on the basis that a biliary colic might be precipitated. In rebuttal, I would like to say that in any case giving a clear clinical history of biliary tract pathology, cholecystography is contra-indicated; and in the second place, roentgenologists have for years, after visualization of the gall bladder, routinely given the motor meal to hasten the evacuation of the viscera. In thousands of these cases, biliary calculi have been present, frequently being observed only in the partially contracted organ. I have yet to hear of, or see in any published report, an instance of

biliary colic having been precipitated by this procedure. Moreover, I am not sure but what fat, during a biliary colic, by relaxing the sphincter of Oddi and stimulating the gall bladder to contraction might not have much the same effect as pituitrin on an inert parturient uterus.

All that has been said pertains primarily to the physiological gall bladder and bile ducts. It is obvious that abnormal physiological or pathological conditions in the gastrointestinal tract, depressed circulatory states, hepatic inadequacy, occlusion of the hepatic or cystic ducts or a patent sphincter of Oddi, would very probably result in a negative cholecystogram. These cases can and should be diagnosed by other means and the patient should not be submitted to an ordeal from which there is little or no hope of additional information.

What has been said does not imply finality. Improvements in cholecystic technique may be expected, especially in the matter of the opaque medium. More study is needed on fats, quantitative and qualitative, in their relation to gall bladder motility. Although some work has been done on the relation of extra-biliary tract pathology to biliary tract physiology, much more needs to be done. Some of these studies are now in progress but more workers are needed and more funds are needed to carry out the necessary projects.

In conclusion, we can say that on that day in 1924 when cholecystography was first announced, the pendulum did not swing too far. A competent and experienced roentgenologist, using a dietary regime based on an understanding of the physiology of the biliary tract, can differentiate the normal from the pathological gall bladder with a higher degree of accuracy than can be done by any other method. To the surgeon, internist, general practitioner or whoever refers the patient for cholecystography belongs part of the responsibility of preparing the patient for examination.

As this paper is a brief running history and a summary of the progress of cholecystography and biliary tract physiology, the published works of others have been drawn upon heavily, my own work constituting but a small part in formulating the conclusions. Individual credit has not been labeled in the body of the paper, but a partial list of those who have made important contributions to this subject has been appended for any who may be interested in pursuing the subject in more detail.

# Treatment of Chronic Arthritis Forms With Reference to Sulphur

## (Preliminary Report)

By ADOLPH WEISSMAN, M.D., New York City

THE TREATMENT of chronic joint diseases appears to be a difficult problem in general therapy today. Perhaps a little of the difficulty lies in the confusion of etiological classifications of these disorders as disseminated by the medical literature, since the rational management largely depends on the recognition of the particular type of arthritis to be treated.

It must be conceded that we do not possess any infallible means of restoring anatomically irreparable changes of bony and cartilaginous structures as frequently encountered in chronic arthritic joints. Clinical experience, however, has shown that there need not be a proportionate correspondence between the degree of anatomical lesion and the extent of the impairment of joint function. Cases of marked deformities of joints with practically no restriction of functions are not even rare.

It must be observed that limitation of motion is not always the result of ankylosis. In fact, the obstructed mobility may arise from a mere functional impairment, viz., a pain accompanying joint function impeding motion by reflex action, a spasm of surrounding muscles restricting movement in a certain direction.

It need not be stressed that whenever an etiologic connection can be detected, this has to receive attention first, in order to eliminate the effect by removing the cause. For example, a menopausal osteo-arthritis will require adequate hormone administration; static forms, appropriate orthopedic correction, and infectious arthritis, removal of responsible foci. Since it is not the purpose of this paper to enumerate all the various causes of arthritis, these three instances were mentioned in order to indicate the further direction of any therapeutic plan.

A large percentage of chronic osteoarthritis conditions does not respond to any method of treatment, even after all the clinically advisable and justifiable and even remote steps have been exhausted. How is this explained? We know that the body is prepared to meet any incidence of disease with its own defensive measures. In the aforementioned ob-

nate cases where the pathologic change persisted for years, the defense mechanism apparently had broken down.

### Sulphur Therapy

The treatment of such old and perverse cases will center about the restoration and stimulation of the debilitated defense apparatus. Sulphur is reported to have some restorative powers since the earliest times, the ancients having utilized it in the form of sulphur baths. Parenteral administration of sulphur ranks high today in popularity. Injections may have some therapeutic value in affording temporary symptomatic relief in some forms of arthritis.

Since the report of the first parenteral administration of sulphur in 1921 by French and German authors,<sup>1</sup> reports of its value have mounted. Its action has been variously explained. It was suggested<sup>2</sup> on experimental evidence that most arthritis patients are in a negative sulphur balance detectable in a low cystine content in the hair and nails. It has also been claimed<sup>3</sup> that the chondroitin sulphuric acid normally present in certain amounts is diminished in some rheumatoid arthritis cases. In addition, sulphur has been credited with a certain detoxifying action which neutralizes harmful agents on combination. Some writers<sup>4</sup> have noticed and reported fever accompanied by leucocytosis with marked shift to the left after intramuscular administration of sulphur in oil. Others noticed a measurable increase in the basal metabolism and concluded<sup>5</sup> that sulphur is a stimulant to cell metabolism.

None of these reports, however, have been substantiated with appropriate clinical or experimental investigation. In fact, in violent contradiction to these claims, and on the basis of most significant and thorough research<sup>6</sup> neither evidence of sulphur deficiency nor abnormality of sulphur metabolism, nor any indication of need for, or benefit from sulphur medication was found. Nevertheless, sulphur has the beneficial stimulative action of a foreign protein. Strasser<sup>7</sup> calls it a specific protein equivalent.

My experience with sulphur comprises several hundred different clinical pictures of chronic rheumatoid and hy-

peritrophic arthritis observed during the course of ten years at the Polyclinic in Vienna. I am now following thirteen differentially aged cases in this country, my investigations of which have given rise to this paper.

At the beginning of my studies in sulphur as an anti-rheumatic, various preparations were indiscriminately used in accordance with their availability on the market. After lengthy experimentation I found a certain sulphur combination\* which I have used now for the past six years, and with the results set forth in the following histories:

**Case No. 1.** A. W., Housewife, aged 60 years, weight 138.6, blood pressure 160/88. Has had several attacks of tonsillitis with fever. Complains of pain in metacarpo-phalangeal joints of index and middle fingers of both hands. Apparently afflicted with similar condition four years ago, which subsided after heat and aspirin treatment. Two years ago she suffered from pain in right shoulder. Arthritis was diagnosed and short wave treatment prescribed, with some relief. At that time, tonsillectomy was performed and teeth repaired; she was thereafter improved. Since March, 1940, incapacitating pain in right ankle joint and left shoulder has been present. Since May, swelling of both hands and inability to clench fists. Aspirin and heat gave no appreciable relief.

**Examination** August 21, 1940. There is a circumscribed periarthritis tenderness in region of the left subacromial bursa; Restriction of movement, especially in the direction of abduction; Metacarpo-phalangeal joints of both hands markedly thickened on left side more than right; Edema in back of left hand; Grasp of both hands infirm; Fingers cannot be flexed into palm; No fever.

**Laboratory:** Leucocytes 8,800; Normal differential count; Sedimentation rate 18 mm in 50 minutes; Uric acid in blood, 3.5 mg%; Wassermann blood test, negative; Urine, negative.

**Impression:** Subacute rheumatoid arthritis, calcified subacromial bursitis.

**Treatment:** She received course of 15 intramuscular injections of sulphur-camphor-salicylic acid compound ("Sacasu") in doses from 0.5 to 1 cc at intervals of twice weekly. At beginning of treatment, an injection of 1% procaine solution administered around left shoulder joint without marked result. Status after third "Sacasu" injection: swelling on back of left hand diminishing; motion

of fingers easier; grasp still weak; ankle joint still swollen; status after 10 injections; left shoulder joint freely movable; no evidence of periarthritis tenderness; still slight swelling on back of left hand; metacarpo-phalangeal joints of index and middle fingers hardly any thickening; joints on left side unchanged; states she has less pain; no swelling around ankle; she complains of pain in right ankle only after walking distances. Status after 15th injection: swelling of left hand considerably reduced though still present; grasp of both hands firm; fingers flexible; all other joints free. Sedimentation rate—18 mm in two (2) hours.

#### Case No. 2

S. K. Housewife aged 63. For past two years complains of sharp mid-dorsal pain on bending, which has increased in severity during past six months. Under dietary restrictions, eating no meats and ingesting only cooked fruits, vegetables, fish and milk. For two months, patient has complained of pain, stiffness and weakness in both hands. Diagnosis: Spondylitis. Menopause occurred twelve years ago uneventfully.

**Examination:** Well developed and nourished woman. Impression of stiffness while walking; gums pyorrhoeic; thoracic organs free of pathology; blood pressure 168/84; hemoglobin 90%; leucocytes 8,200 of which polynuclear constituted: segmented 59%, staff 2% lymphocytes 35%, eosinophiles, 4%. Normal sedimentation time. Kahn test for syphilis negative. Urine essentially negative.

**X-Ray:** Lumbar spine marked spondylitis. Marked lordosis of lumbar spine which appears hardly movable. Heberden's nodes almost every finger. Metacarpo-phalangeal joints of index and middle fingers of both hands slightly thickened. Cannot make fist.

**Treatment:** (February 20, 1941). Received prior to this examination: baking salicylates, diathermy and hot sea baths. She states that lasting results were not attained. Before start of "Sacasu" injections, pyorrhoeic gums were treated. After fifth injection she declares stiffness and weakness of both hands almost gone and able to clench fist. After eight injections, is able to bend lumbar spine slightly without pain. After twelve injections, almost no pain in hands or back. After 15th injection, condition unchanged. After 17th injection, thickening of metacarpo-phalangeal joints hardly noticeable. Asserts she is much more active now and performs even hard and

\*The injectable sulphur combination was supplied under the name "Sacasu" by the Carroll Dunham Smith Pharmacal Company of Orange, New Jersey.

back-bending work in the house, which she could not do at the beginning of treatment.

### Case No. 3

A. C. Housewife aged 55. Stopped menstruating thirteen years ago. Complains of neck pain radiating toward both shoulders. Pain in both knee joints for past two years. Does not complain of any menopausal symptoms such as hot flushes, dizziness, palpitations and sweatings. For one year, she has complained of pain in finger joints of both hands. Various remedies such as salicylates, heat applications and baths do not relieve pain. Not able to close hands because of alleged stiffness in them. Examination (5/1/41) reveals Heberden's nodes around the distal intra-phalangeal joints of both hands. Crepitus within left knee without limitation of motion. Tenderness upon pressure of spinous processes of C5 and C6. Cervical spine freely movable. Weight 152. Blood Pressure 160/100.

**Laboratory:** Blood count normal. Blood urea 2.5 mg%. Urine examination negative. Sedimentation rate normal in 60 minutes. Blood Wassermann negative. X-ray of cervical spine reveals osteoarthritis changes.

**Diagnosis:** Hypertrophic osteo-arthritis.  
**Treatment:** Course of 16 intramuscular injections "Sacasu" from 0.5 to 1.0 cc. Status after third injection: Less pain in neck and left knee joint. After 5 injections, stiffness of both hands almost disappeared. After 8 injections, still slight pain in left knee joint. Still crepitus without any limitation of motion. Pain in neck gone. After 14th injection, still occasional stiffness and weakness in both hands, particularly mornings. Grasp of both hands firmer. After 16 injections, no pain in neck. No stiffness in hands. Pain in left knee rare.

The extent of this paper does not permit a detailed report of all the cases studied. However, the three cases reported are mentioned to illustrate the general indications, administration and therapeutic effect in all but one. This exception was an advanced spondylitis of nearly the entire vertebra, accompanied by marked deformities of both knee joints. The first course of injections evoked no response; the patient, male, 52 years old, is now undergoing a second course, the result of which is still pending.

My findings correspond with those of Lowenstein and Wasserbrenner<sup>8</sup> who treated 600 arthritics among who were patients of both sexes, some over 80 years old and, some of whom had impairment of the cardio-vascular system;

and my experiences both here and abroad give the impression that the preparation in question constitutes an advance in the therapy of chronic arthritis.

### Technic

The combination referred to consists of a mixture of sulphur 2%, camphor 15% and salicylic acid 2%.

The treatment comprises a course of from 15 to 20 intramuscular injections of from 0.5 to 1 cc administered at intervals of twice weekly. In the exigency of the first series evoking no response, a second is to be instituted after the lapse of three months. The injections which should be administered with a long needle, are painless and non-incapacitating.

The single injection contains a small dose of sulphur which is slowly absorbed with the camphorated oil. The basic principle is to cause minimal reactions by minimal doses. This is in line with the previously described action of sulphur. The defense mechanism, once aroused, must not be overburdened with overdosage.

The presence of the 15% camphor in the oil solution is warranted as a mild sedative<sup>9</sup>, counteracting any irritation that may possibly arise from the action of the sulphur on the nervous system. In small doses it has been shown to calm muscular spasms frequently found in arthritics, and in addition, it is a heart stimulant and increases the vis a tergo motion of the blood, this pharmacologically is desirable in elderly arthritics with possible functional impairment of the cardio-vascular mechanism. Its stimulative effect is also beneficial to arthritics who, in the long course of their ailment, have developed a general physical debility.

Because of its various pharmacodynamic effects, a minute quantity of

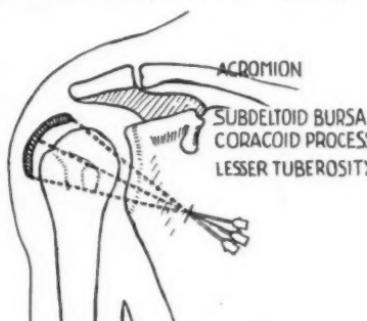


Fig. 1 Technic of injecting around affected joint.



Fig. 2. X-ray showing calcium deposits within subdeltoid bursa.

salicylic acid in 2% concentration is further added. This acid, in its pure concentrated form doing the work of a comparatively larger amount of its salts, has been known to dilate the blood vessels and thus acts synergistically with the camphor. This vasodilating action manifests itself in an increase of perspiration and diuresis. It is further held that the number of leucocytes in the blood markedly increases after a single injection. The desirability of these functions in any process of tissue repair need not be stressed.

That the salicylic acid is present in a very small amount may incline some to doubt that its enumerated effects are more than negligible. It is to be remembered that its presence in an oil solution insures slow absorption, making possible an even continuity of action from one injection to the next. Due to the nature of its operation, i.e., the cumulative stimulation of a complex biological mechanism, requiring time for its development, a result after the first few injections is not to be expected. The complete course must be administered, and, as in certain aforesaid cases, even repeated.

In cases of the involvement of a single, or of a few joints, local and periarticular injection is advisable. In these instances 1 cc. "Sacasu" is mixed with 10 cc. of 1% procaine solution and injected around the affected joint, preferably in all directions. (See illustration, Fig. 1). The subsequent disappearance of pain is, of course, the result of the added procaine, the influence of which is of only a few hours duration. This local anaesthesia, however, renders those joints heretofore incapacitated by painful muscle spasms or by the fear of pain, freely movable, and the patient, having overcome this partially functional and partly psychological obstacle, will realize



Fig. 3. X-ray showing reduced density of calcium deposits, eight weeks after treatment.

that movement of the joint is now possible and will gradually extend its use by more frequent and fearless exercises.

The response of all clinical pictures of bursitis and so-called periarthritis is remarkably favorable. The injections can be administered twice a week until subsidence of symptoms. Sometimes a single injection is sufficient to bring about subjective and objective improvement.

The following two x-ray pictures (Figs. 2 and 3) will illustrate more clearly the clinical effect of the method described.

This patient, F. T., 48 years of age, female, housewife, with a diagnosis of subdeltoid bursitis, received ten 10 cc periarticular injections of a solution consisting of 1% procaine hydrochloride (9 cc) and 1 cc of the product known as "Sacasu;" these were given at weekly intervals.

In addition to above injections, 2 cc of "Sacasu" were administered intramuscularly twice a week for a period of eight weeks. At the present time, patient is still under treatment. The X-ray (Fig. 2) shows calcium deposits within the subdeltoid bursa. This X-ray was taken on first examination of patient. X-ray (Fig. 3) was taken eight weeks after treatment. This X-ray still shows the existence of the calcified bursitis. However, the density has been greatly reduced.

Finally, in order to avoid any misinterpretation, the writer wishes to lay special stress on the fact that sulphur is not an absolute cure. In the treatment of chronic joint conditions accompanied sometimes by extensive structural damages, cure in the sense of complete restitution is unthinkable. The fight against arthritis is long and hard, requiring every chemo-physio- and hydro-therapeutic resource that can be mobilized against it. Nevertheless, in the at-

tainment of considerable, if not total functional restoration, without any of the hazards involved as, for example, in the recently inaugurated administration of gold compounds, and especially after all other routine therapeutic measures have failed, "Sacasu" has its full justification and represents an advance in the therapy of chronic arthritis. Further studies on clinical evaluation are being continued and results will be reported in another communication.

#### SUMMARY

- Attempts at treatment of chronic arthritis ought to be concentrated on one objective: the improvement of the functions of the affected joints.
- Analysis of the action of sulphur has been made and its therapeutic effect evaluated on the basis of clinical reports. Sulphur appears useful in arthritis where the resistance and defense mechanism of the body have been lowered.
- A new combination, consisting of 2% sulphur, 15% camphor and 2% salicylic acid is introduced, to be administered in a series of 15 to 20 twice weekly intramuscular injections of from 0.5 to 1 cc, and to be repeated if the first series produces no effects, after an interval of three months.
- Three clinical histories are cited to illustrate the typical effect of the preparation.
- Cases of calcareous bursitis and so-called periarthritis are to be treated with periarticular injections of the aforesaid preparation to which 10 cc of 1% procaine have been added, at intervals of once weekly until subsidence of symptoms.
- Sulphur, in the presented combination, though not constituting a cure, repre-

sents an advance in the treatment of chronic arthritis forms.

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#### COMING ARTICLES

Notes from the International Postgraduate Medical Assembly . . . . .	R. L. GORRELL
Localization of Foreign Bodies . . . . .	L. G. COLE
Rocky Mountain Spotted Fever . . . . .	G. E. BAKER
Training and Healing After Apoplexy . . . . .	W. G. ELIASBERG
Office Practice (Misc. Clinical Notes) . . . . .	Graduate Course
Hematuria, Think of the Cervix . . . . .	W. S. PUGH

# Medical Problems of the War (Physicians)\*

By FRANK H. LAHEY, M.D. Chairman of the Physicians Procurement and Assignment Board, Washington

PHYSICIANS are scarce today and will become scarcer. These problems in arithmetic will underline this conclusion:

essentially as teachers in medical schools, pathologists and industrial physicians.

Service	No. of Physicians	Potential Patients	Patients per M.D.
Army, U. S.	41,400	8,000,000	193
Navy, U. S.	10,100 (including 300 in Coast Guard)	2,500,000	247
Civilian	65,000 under 65 yrs.	120,000,000	1,846

Without meaning to criticize, it seems that the services are taking far more physicians than are actually needed. We (The Procurement and Assignment Board) will not question the Army and Navy decisions abroad but will continue, quietly, to question their medical decisions of utilization at home. The Army feels that more physicians are needed by them than is the opinion of many competent observers.

## The Physicians Who Are Left

Physically fit physicians under 38 years old .....	34,486
In service .....	30,130
In civilian practice .....	4,356
Physically fit physicians from 38-45 years old .....	19,867
In service .....	8,788

In practice ..... 11,079  
Thus the total civilian physicians under 45 who are physically fit number 15,465. Of the 51,000 doctors in the armed services, only 5.2 percent are over 45 years of age. There are 28,000 physicians over 65 years of age; of this group, only  $\frac{1}{4}$  can be considered wholly useful.

Many of the physicians under 45 left in practice, who are physically fit, cannot be (or should not be) taken into the armed services because 5,000 are in states which have already given more than their quota, and among the 10,000 remaining who are qualified for service, many must be deferred because of their

## Replacements

Medical schools are now producing 7,300 physicians yearly. Civilians will get only rejectees (10 percent) and women physicians.

Eighty percent of medical students are in the Armed services—they pay no tuition or support, and receive in addition fifty dollars monthly. There is little prospect of obtaining the additional twenty percent who must pay in full (rejectees, women medical students).

We cannot count on more than 2,000 to 2,500 replacements for the 3,800 civilian physicians lost each year through death or retirement. The 65,000 civilian physicians are not being replaced, and will not be replaced for a number of years, as the armed forces require 5,000 to 6,000 physicians yearly for replacements.

## Civilian Practice

Luxury medicine and surgery is "out" for the duration. Surgeons must change their hours so that the operating rooms and staff are kept busy all day, and the usual morning rush avoided.

Special nurses should not be wasted. Well-to-do patients should select companions other than R. N.'s.

Veteran's Hospitals are already receiving 2,000 patients each month from the armed forces and this number is increasing.

Civilian hospital beds are "hot," with one patient hardly getting out before another gets in.

## The 999 Program

Under the terms of the 999 program, interns would serve 9 months only. One

\*Taken and abstracted by R.L.G. during the Chicago meeting, Oct. 26-29, 1943, of the Interstate Postgraduate Medical Assembly.

third of interns would serve an additional 9 months as junior residents and one-sixth of the total number would serve another 9 months as senior residents.

#### Question Young Physicians

Every physician marked available by the Procurement and Assignment Board should be compelled to take a physical examination, and if physically acceptable, to take a commission.

Each of you should find out about men under 45 and ask if they have questioned their classification. If they haven't, ask them why they didn't seek a commission.

Those of you who have been classed as essential should find a replacement be-

fore seeking a commission. The Board cannot do this.

#### Wasting Navy Physicians

On a recent trip, I saw many Navy physicians writing long forms and records. Medical men should be used for medical purposes; secretarial aids, WAVES or dictaphones—not that I mean to imply they are identical—should do the paper work.

#### Possible Solutions

Medical pools or grouping of physicians could be used in emergencies. Possibly there might be an interchange of military and civilian medical personnel.

There are many problems to be worked out. During this trying process, let us all be tolerant of each other.

## New Therapy of Common Skin Diseases\*

By C. S. WRIGHT, M. D., Professor of Dermatology  
Temple University, Philadelphia

#### Ringworm

The patient with ringworm should be told that he has an infection resembling a perennial weed, which can be carried for a long time without giving symptoms, so he must continue treatment long after he is apparently well. There is no single treatment for ringworm.

The acute stage is treated by incising lesions and letting the infected fluid drain out (to prevent development of "id" or allergic lesions elsewhere on the body and especially on the hands). Potassium permanganate soaks or baths of 1-4000 dilution are used during the acute stage.

The dry type is treated by Castellani's paint.<sup>†</sup>

Chronic ringworm is treated with a strong desquamating ointment, using up to 50 percent salicylic acid, such as:

Linololin

Salicylic acid aa

The recently publicized phenol-camphor treatment (*Reader's Digest*) results in many cases of dermatitis.

#### Scabies

This is the third most common skin disease and should be thought of first in all patients who complain of generalized pruritis. It is readily cured by

U.S.P. sulfur ointment, except in those patients with sulfur sensitivity. Benzyl benzoate when applied after a bath, rubbed over the entire body, except face, and allowed to remain for 24 hours will frequently cure scabies. Pruritis stops almost at once.

#### Eczema

Nummular eczema appears on the forearm as coinshaped lesions, which weep at first and then become thickened and scaly. Treatment: Silver nitrate in 1/4 to 1 percent compresses during acute stage, followed later by 5 percent crude coal tar in chloroform; vitamin A is given in large doses by mouth. It must be differentiated from atopic dermatitis, which appears in the infant.

Eczema on the cheeks of an infant is often atopic, and is incurable like hayfever. If seborrheic or caused by external contact, learn which substance is causative by using a simple patch test.

Any simple treatment, such as 1 percent tar ointment or boric acid salve will cure after removal of the irritating substance responsible for the contact dermatitis.

#### Facial Eruptions

Fly spray may cause an eruption on the face.

Seborrheic dermatitis spreads from the scalp; it is not curable. The scalp should be attacked with sulfur or U.S.P. crude oil.

\*Taken and abstracted by R.L.G. during the Chicago meeting, Oct. 26-29, of the Interstate Postgraduate Medical Assembly.

<sup>†</sup>Castellani's paint is manufactured by Handley Laboratories, Somerville, Mass.

*Impetigo* is often cured in 5 days by local applications of sulfathiazole. If strong mercurial applications are made, a dermatitis often results.

*Herpes zoster* is somewhat improved by the injection of 150 mg. of thiamin (vitamin B<sub>1</sub>) intravenously or intramuscularly. The intravenous injection of 30 gr. of sodium iodide twice weekly is of value in painful cases.

*Lupus erythematosus* is made worse by sunlight. Gold thiosulphate injections cure many cases; they may be used if white blood count is normal. If the white blood count is less than 6,000 it should not be used because of the danger of causing leukopenia. Bismuth salicylate injections should then be used.

*Dermatitis herpetiformis* is much improved by sulfadiazine given orally.

#### Generalized Eruptions

*Chronic urticaria* (hives) is based on nervous instability. Histamine relieves a number of patients, especially if the wheals appear following cold or other physical cause. Chronic hives in children often respond to parathyroid injections.

*Psoriasis* is of frequent occurrence (1 out of each 18 patients with skin disease). If such patients can be hospitalized, they may be cleared up by the

Mayo Clinic routine of crude coal tar applied at night and strong ultra-violet or sunlight the next day. A few patients are permanently cured by this treatment. An occasional case responds to massive doses of vitamin D (not considered a safe treatment).

*Nevi:* If of the port wine type, they are best covered with Cover-Mark (Lydia O'Leary), as treatment is ineffective.

If of the strawberry type, Carbon dioxide snow applied for 10 to 40 seconds on two or three occasions will usually cure this lesion. As the birthmark grows with the child, treatment should be started during the first week of life. One may also inject sodium morrhuate as a sclerosing solution or treat with x-ray.

*Warts:* When one wart appears, remove it at once before spread starts and many warts appear. For plantar warts on the sole of the foot, cut off the extra skin and treat with x-ray. If acids or electric fulguration are used, a slow healing, painful ulcer often results.

*Epitheliomas* of the skin may be cured in the office if seen in the early stages, by electrofulguration, x-ray or radium.

## Wrong Use of Ascorbic Acid (Vitamin C) in Certain Nephropathies and Hepatic Disease

By DR. EDUARDO CRUZ COKE,\* Santiago, Chile

PHYSICIANS often forget that vitamins, especially in large doses, are in many instances contraindicated.

This is the case of ascorbic acid (Vitamin C) when it is used intravenously or by mouth, in doses of 10 centigrams† or more per day.

Contraindications refer to 2 syndromes:  
1. Nephrogenic hypertension.

2. Hepatitis with increased liver autolysis.

Ascorbic acid induces strong reductions that, in the kidneys, submitted to relative anoxemia, promotes the production of hypertensins besides reducing the rate of its destruction. The elevation of the hypertensin level in the blood is the factor responsible for the maintenance of renal vasoconstriction and is the prime factor of the pathologic process that should be detained.

Regarding the liver, we know that ascorbic acid in doses higher than the concentrations found in a normal diet, stimulate autolysis, especially on parenchymatous organs such as the liver. Artificial acceleration of autolysis § in the case of hepatitis is inconvenient and must be considered in the treatment of hepatic disease, yet this is seldom done by clinicians.

Our clinical experience, and that of our assistants, has confirmed these principles about the pharmacologic properties of vitamin C.

\*From Lab de Química Fisiológica y Patológica, Universidad de Chile.

†. Centigram: One hundredth part of a gram. In this country, ascorbic acid is marketed in terms of milligrams, or one thousandth part of a gram. 10 centigrams would refer to a dose of 100 mg. Doses of 100 to 250 mg. daily have recently been advocated in the treatment of hay fever and other allergic conditions.—Ed.

‡. Ascorbic acid was isolated from oranges, lemons and the cortex of the adrenal gland in 1928 by Szent-Gyorgyi. As it is water soluble, it may be given intravenously, subcutaneously or orally. It functions in intracellular oxidation-reduction processes. F. R. Davison "Materia Medica" (Mosby 1942).

§. Autolysis: The spontaneous disintegration of tissues or cells by the action of their own enzymes, occurring after death and in some pathological conditions; self-digestion. (Dorland).



# GRADUATE COURSE

## Hypothyroidism



Fig. 1. Facial appearance of persons with hypothyroidism. Many hypothyroid patients appear perfectly normal, especially when true myxedema is not present.

IT IS SAID THAT mild hypothyroidism is the most frequently missed diagnosis today. The diagnosis must be made clinically, as the basal metabolic rate may be normal or only slightly lowered and may not be applied to infants. There are a number of clinical aphorisms that may be helpful:

1. Thyroid extract is the most helpful glandular agent in the treatment of menorrhagia, amenorrhea and other gynecologic endocrinopathies.
2. Any baby weighing ten pounds or more at birth is probably hypothyroid.
3. Constipation is often a symptom of hypothyroidism.
4. Thyroid extract may be used in many other conditions than in myxedema; it is often effective in treating deafness. (J. H. Means excellent book on "Diseases of the Thyroid.")
5. The late appearance of epiphyses or centers of ossification (on the x-ray

film) may be considered diagnostic of hypothyroidism. Syphilis and rickets are not causative (Signorelli, Hosen and Miles in *Journal of Pediatrics*, Aug. 1935).

### Discussion

By L. M. HURXTHAL, M.D., Section on Medicine, Lahey Clinic, Boston, Mass.

These symptoms should make one suspicious of hypothyroidism:

1. Mental sluggishness and sleepiness
2. Sensitivity to cold
3. Dry skin; absent or decreased perspiration
4. Menorrhagia (occasionally)

Definite signs of hypothyroidism are:

1. Puffiness below and laterally to eyes; stolid look (if advanced myxedema)
2. Dry hair; does not take permanent wave well; hair is brittle, fine, often thin.

3. Skin is dry, may be scaly.
4. Slow pulse.
5. Sluggish reflexes; answers questions sluggishly

### Discussion

By E. L. SEVRINGHAUS, M.D.  
University of Wisconsin Medical School  
Madison, Wisconsin

These symptoms should make one suspicious of hypothyroidism: Sleepiness during the day, dryness of the skin, constipation, sensitivity to cold and apathy.

These are definite signs: Dry exfoliative dermatitis of the scalp, exfoliative and almost ichthyoid changes on the skin most marked over the elbows and knees, slow pulse, pallor, hypochromic anemia, protuberant abdomen, slow response to questions and sluggish reflexes.

### Discussion

By P. C. JEANS, M.D.  
Department of Pediatrics

*University of Iowa, Iowa City, Iowa*  
Definite signs of hypothyroidism are: (1) in children, retarded growth as shown by roentgenograms and (2) a low basal metabolic rate in the absence of obesity. Obesity causes a falsely low metabolic rate.

### Hypothyroidism From the Gynecologic Standpoint

By WILLIS E. BROWN, M.D.  
Assistant Professor of Gynecology  
*University of Nebraska, Omaha*

The diagnostic features can be grouped into six general categories:

(1) Disturbances in metabolism: These patients may be fat or thin, but show disturbance beyond the normal for their development;

(2) Disturbances in the cardiovascular system: Bradycardia and hypotension are the most common, but a tachycardia and pulse irregularities are not uncommon (dermatographia is very common in this latter group).

(3) Gastrointestinal disturbances may take any of several forms, although constipation and spastic colon are the most common. Diarrhea is not too infrequent.

(4) Neuromuscular changes: extreme fatigue or irritability. Mental sluggishness does not appear in mild hypothyroidism, as it is the picture of myxedema. Drowsiness, especially in the morning but persisting throughout the day, is very common.

(5) Heat regulation is commonly disturbed and patients usually show decreased sweating and dry skin. They cannot tolerate cold. Morning rectal temperatures are usually low.

(6) Disturbance in reproduction may take the form of sterility, abortion, or



Fig. 2. The appearance of the hand in hypothyroidism.

any of the several forms of menstrual abnormalities (amenorrhea, polymenorrhea, hypermenorrhea and menorrhagia).

The diagnosis of hypothyroidism, as separated from myxedema, is a clinical and not a laboratory one. The basal metabolic rate, blood cholesterol examination and the response of the cholesterol to thyroid therapy are useful laboratory tests to aid in estimating the degree of hypothyroidism and confirming your clinical diagnosis.

### Symptoms of Hypothyroidism

By JAMES H. HUTTON, M.D.  
*Chicago, Illinois*

In the mental sphere there is loss of power of memory and concentration. There is physical retardation. Movements are apt to be more slow and clumsy. Pains along the nerves and in the joints are often mistaken for arthritis or neuritis and severe cases have been called tabes. The patient is apt to be tired on awakening. He improves in a few hours but this is shortly followed by fatigue out of proportion to the exertion. He is sensitive to cold and enjoys hot weather. There is apt to be some gain in weight. In the gastro-intestinal tract the symptoms range from constipation to those which suggest ulcer or gall bladder disease. Any patient whose symptoms are such as to suggest an x-ray study of the gall bladder or gastro-intestinal tract should first have hypothyroidism ruled out because of the ease and low cost of doing this as compared with the expense and inconvenience of doing those complete x-ray studies. Prolongation of nocturnal enure-

sis beyond the age when it should normally cease is often due to thyroid and pituitary deficiency.

#### Physical and Laboratory Signs

The skin is dry and the hair and nails brittle. In severe cases the gums are spongy and bleed easily. The obesity is generally distributed with padding on the dorsum of hands and feet and cuffing about wrists and ankles. Supraclavicular fat pads may be present but are often seen when hypothyroidism is not the underlying factor.

There is thinning of the eyebrows, particularly the outer third, and loss of hair on the arms and legs. The pulse is usually slow. The basal metabolic rate is low. This is often wrongly interpreted as completing the diagnosis of hypothyroidism, but low readings are often encountered in hypopituitarism and hypoadrenia. Unless the clinical signs and symptoms of hypothyroidism are present, a low basal metabolic rate usually means some nonthyroid condition, most often hypopituitarism. The patient's reaction to temperature and medication makes the differentiation. Victims of hypothyroidism are sensitive to cold weather and enjoy hot weather. A person with hypopituitarism is less sensitive to temperature, while the victim of hypoadrenia is as sensitive to heat as to cold. The administration of thyroid will cause the person with hypothyroidism to feel better, while the victim of hypoadrenia feels worse. An injection of 0.5 cc. anterior pituitary ex-

tract causes the victim of hypopituitarism to feel better and relieves many of the symptoms, usually within an hour after the injection. A secondary type of anemia is often present in hypothyroidism and the urine may contain albumen and casts.

#### Roentgenologic Aspects of Hypothyroidism

By LEO G. RIGLER, M.D.

Chief of Service

University of Minnesota Hospitals  
Minneapolis, Minnesota

Adult myxedema or hypothyroidism produces, in some cases, an *enlarged heart*. The heart tends to have a somewhat globular shape and shows an unusually marked enlargement to the right as compared with the left. The pulsations are reduced and the heart is somewhat flabby in appearance. One of its striking manifestations is its remarkable reduction in size in response to thyroid therapy.

#### In the Child

In hypothyroidism in children or in cretinism, there is a marked delay in the development of bony ossification centers. This manifests itself in the examination of the wrists particularly but also of the other joint areas where ossification centers occur, and it will be found that in comparison with the normal, the appearance of the ossific centers is markedly delayed. Sometimes there is enlargement of the skull and some enlargement of the sella turcica.



Fig. 3. Markedly hypothyroid child, left, as contrasted to a normal child.



CHARLES BELL

# *Editorial*

## Sir Charles Bell

MEDICINE and surgery are both largely arts, even today, and were more definitely so a century ago than they are now. It is really not strange, then, to find that a number of men who have made high names for themselves in the Healing Art, have been artists in the more popular understanding of the word. Charles Bell was one of these.

Charles was born in Edinburgh, Scotland, about the time the thirteen American Colonies were becoming very peevish at the tactics of their British sovereign (1774). His father was a Scottish Episcopal clergyman, the Rev. Wm. Bell, who had already begotten another son who was to rise to fame.

The schools of Edinburgh gave Charles his basic education and because, perhaps, his elder brother John, was turning his thoughts towards a surgical career, he became intensely interested in anatomy and, when John opened a school for the teaching of that subject, in 1790, Charles not only became a pupil, but assisted his brother in his demonstrations, as well as his practice of surgery.

After nine years of such work, he had become so proficient as to gain his membership in the Edinburgh College of Surgeons and, soon afterward, an appointment as one of the surgeons of the Royal Infirmary.

A few years later the senior and junior members of the College became involved in some sort of petty controversy, which so disgusted Mr. Bell that he left his native city for London where, in 1804, he began giving lectures on anatomy in his own house, but soon formed an association with Mr. Wilson, F.R.S., and became one of the most popular lecturers in his school in Great Windmill Street.

Bell had been much interested in the surgery of gunshot wounds and, in 1809, he had a chance to study such cases at first hand, for which purpose he went to the South of England and assisted in the care of the wounded men brought back from the battle of Corunna. Another similar, but greater, opportunity came with the battle of Waterloo (1815), and

Bell was one of the first surgeons to reach Brussels, where he was placed in charge of a hospital. On these and many other occasions, he demonstrated his right to be classed as one of the foremost surgeons of the nineteenth century.

It was here that the artistic genius, which had made his "System of Dissections" (1789) and "Engravings of the Brain and Nervous System" (1802) popular, by reason of the exquisite illustrations which he made for them, served him and the world in good stead, for the drawings which he made of the wounds he saw and treated have been called the finest specimens of water colors in the English anatomic school. All of his books were embellished with remarkable drawings and sketches, all his own workmanship.

Bell became a member of the English College of Surgeons, in 1812 and, soon after, was appointed professor of anatomy. Later he was placed at the head of the newly established University of Edinburgh, having, by that time acquired an international reputation.

This clever and versatile man never acquired the clinical practice to which his talents entitled him, because he was more interested in investigation than he was in clinical surgery; but these researches of his have given him a place among the Immortals where, strangely enough, he is chiefly remembered as a neurologist.

In 1811 Bell discovered, for the first time, that there was a difference in the functions of the anterior and posterior roots of the spinal nerves. He followed up these studies earnestly but, because of his aversion to visisection it was not until 1826 that he acquired a clear conception of the distinction between sensory and motor nerves.

In 1829 he demonstrated that the fifth cranial nerve is sensory-motor and discovered the motor nerve of the face, Paralysis of which is known, to this day, as "Bell's Palsy." All of his neurologic studies were published in a book in 1830.

In the midst of these varied activities, Bell found time to make a careful study of cancer, and the clinical picture and treatment recommended, and which he published in 1820, is still, with the exception of our knowledge of radium and x-rays perfectly sound today.

Bell was a simple, genial, kindly man, with a keen sense of humor, and something of a dandy as to his dress. He was extremely popular and much sought after during his years in London and was made a Knight of Hanover in 1829. His eventful and fruitful life, which exercises an immense influence on the surgery of his generation and contributed much to the permanent fund of knowledge, came to a close in 1847, he being in his sixty-eighth year.

◆  
The first problem is to confront the day without any stress or strain within.—MANLY P. HALL.  
◆

### Enter the Family Doctor

After the war, Brig. Gen. David A. Grant, Air Surgeon, U. S. A. Air Forces believes that the family doctor is coming back to the American medical scene.

Flight surgeons, now being trained by the thousands, act as physicians to the flying men under their care, and also are required to have the family physician's intimate knowledge of each patient as an individual.

The best type of preventive medicine is the indication by early signs (increasing smoking or drinking, nervousness) that the men need rest from flying, even though the man himself still feels fit. The physician must determine this time as an individual matter.—*Science News Letter*, June 19, 1943.

In many sections of the country, the general practitioner has never left the scene, although his prestige has markedly decreased, and carries on with medical, surgical and obstetrical practice.

One reason that his prestige has decreased is that the public is more health minded and knows more concerning possible treatments. The physician who does not keep up with the better (not necessarily newer) methods of diagnosis and treatment will find his patients slipping away to specialists and

clinics. Patients are allowed to go on with conditions that can be remedied by special care or can be diagnosed by special methods, yet are not advised that such should be done. If and when they do learn that something should have been done, they are angry—and rightly so—with the physician who failed in his duty.

As we see it, the general practitioner's job is:

1. To know what he can safely do, and do it;
2. To know what others can do, and refer patients to them *early*;
3. To know when to ignore specialist's opinions.

The third line is very difficult to carry out, and with today's exalted opinion of specialist's advice, often impossible.

**Case history:** Woman of 56 has had cholecystectomy, hysterectomy and perineorraphy, as three separate surgical procedures over a period of four years, yet is still troubled with indigestion due to achlorhydria, rectal distress due to constipation and fecal impaction, and pelvic pain. She has consulted physicians frequently, regularly and expensively for years, and her history alone should have barred any removal of the gall bladder for a small amount of dust, yet three different surgeons (gynecologist and two general surgeons) advised surgical procedures. The general practitioner wonders, in a nasty way he has at times, if the abolition of large surgical fees would abolish such unnecessary surgery.

To know what others can do, and to definitely see to it that the patient is told about it early in the course of illness is as important as knowing what one's own capabilities and limitations are. Patient's with unexplained fever should not be allowed to drift on without consultation by someone who knows more, about that field, than you do. The patient with a deformed or obstructed nose should be referred to a plastic surgeon. If you cannot make a diagnosis, the patient should be informed that more help is needed. The intelligent patient feels confidence in a physician who admits that he is not a little god.

◆  
Talent is that which is in man's power; genius is that in whose power man is.—LOWELL.



# CLINICAL NOTES and ABSTRACTS

Microfilm copies of any of the published papers here abstracted, up to 25 pages, may be obtained for 25 cents from Microfilm Service, Army Medical Library, Washington, D.C.

## New Aspects of Malaria

THE patient who has lived in a district where malaria is endemic should be considered as having malaria until this diagnosis is disproved.

In areas of endemic malaria it should be a monthly routine to examine thick smears of blood from all military personnel, two specimens being taken on successive days. All persons with smears containing malarial parasites, even those without symptoms, should be treated vigorously to forestall attacks.

In general, the policy of treating men for malaria only after they become infected is better than prophylactic treatment, if adequate laboratory facilities are available. Certainly this rule holds in peace time or at any base where military urgency does not require that a maximum number of men be kept in the field to fight. However, in an area of active combat, especially where malaria caused by *P. falciparum* is endemic, prophylactic antimalarial measures must be adopted.

Treatment of malaria with both quinine and atabrine (when both are available) is more effective in preventing recurrences than prolonged treatment with one of them. Plasmochin may be indicated in rare, specially selected cases of repeated occurrences.

The diagnosis and treatment of malaria will be wrongfully influenced if a positive Wassermann or Kahn reaction is considered pathognomonic for syphilis.

Malaria, like syphilis, may simulate different diseases of every part of the body, and the absence of chills and fever should not rule out its occurrence in people who are living or have sometime in the past lived in the tropics or other areas of endemic malaria.

### Atypical Cases

In a large group of cases studied there

were various manifestations of cerebral malaria. It simulated medical shock with its headache, fever and prostration, or sunstroke, heat exhaustion, acute alcoholism, acute mania or afebrile psychoses. The symptoms cleared up or great improvement was noted on antimalarial therapy.

In this large group of cases, the only complaint was of visual disorder with headache, often of long duration. Some of the patients had typical axial neuritis, with clouding or dimness of vision, temporal or frontal headache and deep pain in the orbit which was made worse by pressure or movement. Under antimalarial treatment, these patients usually improved, some with varying degrees of residual visual impairment. Some of the visual disorders were due to midbrain or cortical lesions from malaria.

Malaria may involve any other one of the cranial nerves, with appropriate symptoms. After the optic nerve, the eighth nerve is the next in frequency of involvement, with resulting vertigo and deafness. A pure malarial basilar meningitis is sometimes seen and might cause any of these lesions.

Damage to the thyroid or the adrenal gland from malaria may result in appropriate symptoms of various degrees of intensity. Replacement therapy with the indicated glandular products may be helpful in starting convalescence in these cases.

### Pulmonary Symptoms

Embolic occlusions of malarial causation in the wall of the upper part of the bronchial tree may cause severe attacks of asthma or a persistent cough, usually nonproductive, with negative findings in the chest on physical examination. These symptoms, which are often the only complaints, clear up quickly under antimalarial treatment.

*Weakness, shortness of breath and a rapid pulse on exertion may be the only symptoms resulting from direct malarial cardiac damage, or there may be symptoms of damage to the vagus nerve.*

*Nausea and vomiting*, especially in children, may be the only malarial symptom observed. This may be due to involvement of the central nervous system as in basilar meningitis, to pressure from an enlarged liver or spleen or to pancreatic involvement with deep seated pain.

#### Intestinal Form

*Dysentery* sometimes occurs as the first observed symptom. The patient with this complication of malaria shows intestinal mucosal capillaries filled with parasites. When this patient comes to autopsy, the mucosa of the intestine is congested and dark red or has a mottled appearance as in catarrhal dysentery, while the contents may be mucus and blood cells, and the epithelial cells may be necrotic, with secondary bacterial invasion also showing in the mucosa.

#### Renal and Bladder Involvement

The first complaint may be of urinary frequency, which is due to involvement of the wall of the bladder, or of discoloration of the urine, to red, brown or black. These symptoms accompany various degrees of renal alterations due to malaria; or the first complaint may be of anuria, as in acute malarial nephritis or the terminal stage of blackwater fever.

Biliary malaria is first evidenced by slight jaundice, and the patient may show a remittent type of fever. This was a fairly frequent form in our experience and responded somewhat more slowly to quinine than other forms.

Pronounced pallor of the face with a bluish or yellowish tinge to the scleras may be the only evidence of malarial infection in persons who insist that they feel fine and are perfectly well but just have the "tropical pallor," though a thick smear shows numerous plasmodia in their red blood cells, as well as definite anemia.

There remained one group of cases put together only because of the common factor of inconsequential symptoms: cases in which vague neuralgia or pains in the muscles or joints or various atypical cutaneous eruptions occurred as the only symptom; blood smears were positive and recovery occurred on quinine therapy.—D. R. TALBOT, M.D. in *Jour. A. M. A.*, Sept. 25, 1943.

#### Malaria in Children

Infants and children establish an immunity to malaria at eight years old if they have been infected repeatedly. In many cases, sufficient immunity changes the clinical picture. When treatment is given, the dosage of quinine sulfate ranges from 0.50 Gm. to 0.75 Gm. daily for a child six and older with proportionate dosage for younger children. The spleen shows changes in size from week to week.—R. B. HILL, M.D., in *Am. J. Trop. Med.*, March, 1943.

#### Newer Therapy of Myasthenia Gravis

The earliest signs of myasthenia gravis are usually ptoses and pareses of the extraocular muscles. The response to prostigmine in the earliest stages of the disease is spectacular, giving a complete relief of the ptoses and muscular pareses, but later stages of the disease fail to respond even to doses given for diagnostic purposes.

Treatment with aminoacetic acid combined with suprarenal cortex and symptomatic therapy gives a more lasting response that continues even after failure of response to prostigmine. But as the disease advances, it will be found that response to the combined therapy also fails.

Then, it will be found that the addition of wheat germ oil, vitamin E, alpha tocopherol or epynol therapy to the glycocoll, suprarenal cortex and symptomatic therapy will restore the response of the myasthenia to therapy and will give marked improvement and relief. This response is characterized by a sharp drop in the relative amounts of creatine and creatinine excreted in the urine.

In a series of advanced cases of myasthenia gravis with thymoma that failed to respond to all the therapy hitherto mentioned, striking results were obtained by the administration of manganese salts ( $MnSO_4 \cdot 4H_2O$  was most frequently used) together with vitamin E and symptomatic therapy. Relief of the symptoms attributable to the thymoma was obtained fairly promptly, generally in several weeks. The mediastinal x-ray shadows showed greater reduction under manganese therapy than had been attainable with deep x-ray therapy. Symptoms attributable to the endocrine imbalance that often characterizes myasthenia gravis, such as exophthalmos, also cleared up.

The parallelism of the symptoms of

manganese and vitamin E deficiencies is indicated (Orent and McCollum, Daniels and Everson) by the fact that deficient females produce nonviable young, and males develop sterility and testicular degeneration. The influence of manganese upon muscular activity has been demonstrated by Bailey, who showed that manganese and calcium strongly activate the adenosine-triphosphate activity of myosin.—EMANUEL M. JOSEPHSON, M.D., E.E.N.T.M., June 1943.

### New Physical Sign in Lung Infarct

Because of the similarity of symptoms of lung infarction and several other acute conditions, every new physical finding in this complaint is welcome.

McMillan, of Winston-Salem, in the *North Carolina Medical Journal*, December 1942, describes a sign which, in conjunction with the other established findings, will be of considerable help in the diagnosis of lung infarcts.

It was noted that when the infarction was of any appreciable size, almost invariably these patients exhibited the most extreme tenderness at very light fist percussion. This has not been found true in cases of lobar pneumonia.

The percussion is performed by a very gentle tapping with the ulnar side of the closed fist, so as to produce a very slight jarring effect. The sign may also be elicited in most cases by light direct or immediate percussion with the fingertips.

In reviewing the other findings which are observed in lung infarction, the author mentions the following as classic symptoms: sudden onset with pain in the chest, dyspnea, cough, red or streaked sputum, cyanosis. The patient is usually alert, but extremely restless, and does not appear toxic, as does the patient with lobar pneumonia.

### Newer Knowledge of Epilepsy\*

Many factors help to bring on epileptic attacks: alkalosis, anoxemia, (oxygen lack), anemia, hydration (too much fluid in the body) and hypoglycemia. These are not causative factors, but precipitating factors.

*The cause of epilepsy is the disordered chemistry of the discharging neurones of the brain.*

Dilantin sodium (phenytoin sodium) composes the underlying disordered electric potentials of the brain; it is the

most effective drug for controlling major seizures. Unlike bromides and phenobarbital, it has little hypnotic effect.

### Electroencephalography

Electrical pulsations of the brain cortex are transmitted through the skull and can be recorded by the electroencephalogram. Pronounced disturbances in the pulsations of the electrical waves of the brain are present in all patients during epileptic seizures and in 90 percent of patients during a free period. The three main types of seizures are characterized by different types of dysrhythmia. Epilepsy may be called a cerebral dysrhythmia. Disordered patterns of brain waves are also found in a large proportion of individuals whose conduct or whose physical processes are abnormal: behavior problem children, "psychopathic personality adults," alcoholics and prisoners.

Electroencephalography is used in (1) diagnosis of epilepsy, (2) localization of cortical lesions, and (3) to a smaller extent, in judging success of treatment.

The pattern of waves seems to be a hereditary trait. The brain waves of similar twins, who have not suffered brain injury, are indistinguishable, whereas the waves of dissimilar twins are not.

### Epileptic's Relatives

Electroencephalographic studies show that dysrhythmia is 20 times as common among relatives of the epileptic, as in the general run of persons. Dysrhythmia may accompany paroxysmal disorders of conduct or thought, or for all we know, may accompany genius.

### Carbon Dioxide

It has been shown possible to insert a needle into the internal jugular vein without harm to the patient, and thus to study directly the blood flowing from the brain (this is an experimental method, and is not required in the modern study of epileptics—Ed.). Such studies have shown the great importance of carbon dioxide in brain activity. Small changes in carbon dioxide tension are of greater importance than small changes in oxygen tension. Oxygen lack sufficient to produce unconsciousness and dysrhythmia is quickly relieved by carbon dioxide, consciousness returns and normal rhythm follows.—WILLIAM G. LENNOX, M.D., Boston, Massachusetts.

I am enjoying CLINICAL MEDICINE very much and profit by it greatly.—H.B., M.D., New York.

\*Ann. Int. Med., May, 1943.

### Postural Treatment of Biliary Colic

Biliary colic should be treated by this method: (1) The patient must lie flat on the abdomen. (See Figs. 1 and 2 for comparative postural diagrams and explanation). (2) Morphine is given in small dose, as  $\frac{1}{2}$  gr., so that it may be repeated, to increase the resistance of the sphincter of Oddi. (3) Antispasmodics and vasodilators are given in large doses

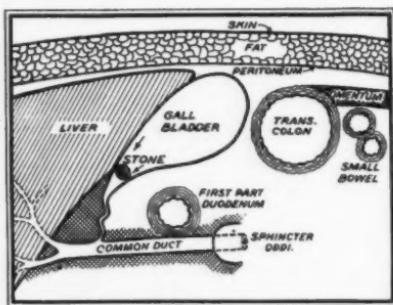


Fig. 1. Patient Lying on Back. The force of gravity, as well as the increased intravesical pressure which results from excessive mucosal secretion, both tend to force the stone further into the duct.

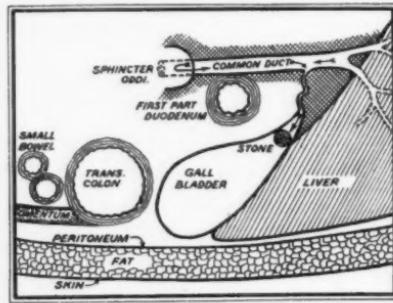


Fig. 2. Patient Lying on Stomach. The force of gravity is a help in displacing the calculus. In addition to this postural treatment, choleretic drugs are administered and the resulting increased flow of bile is directed against the stone from the direction which is most likely to displace it.

to relax any contractile mechanism in the cystic duct, such as 1/100 gr. nitro-glycerin under the tongue; inhalations of amyl nitrite; tincture belladonna min. 30 orally; a hypodermic injection of 1/150 gr. of atropine; or 4 neurotransient tablets. (4) Sedatives to produce physical and mental rest, (5) Choleretic drugs to increase flow of bile (Decholin, 3 tablets, repeated in 1 hour;

Bilron capsules or Ketachol tablets in similar dosage). (6) Heat to the abdomen and (7) Surgery, when the patient is prepared, for the prevention of empyema, necrosis, gangrene or perforation.—DEAN MACDONALD, M.D. in *Am. J. Dig. Dis.*, April, 1943.

### Newer Knowledge in Orthopedics

**FRACTURES:** Fractures of the humerus are now treated by means of the Caldwell's Hanging Cast. A local anesthetic (Novocaine solution) is used for broken ribs in elderly individuals. Fractures of the calcaneus and many ankle fractures are best treated by open operation. Compound fractures must be treated by early, careful and thorough removal of dead tissues. Local applications of a sulfonamide drug cannot protect devitalized tissues.

**AMPUTATION:** The most satisfactory type of amputation is the Gritti-Stokes amputation above the knee as it provides a most satisfactory leg in the long run, with the possible exception of a well done Symes.

**ARTHRITIS:** Don't forget gout! We are missing many cases of borderline gout. The first step in diagnosis is to think of it. The best test is the response on the part of the patient to diet and neocinchophen.

**GONORRHEAL URETHRITIS:** The patient should be kept in bed and traction applied if necessary to overcome painful spasm. The joint should be aspirated as frequently as effusion recurs. The presence of pus cells in a joint spells permanent injury for the enzyme of the polymorphonuclear cells dissolves cartilage. If the cartilage is destroyed the joint should be immobilized in a functional position until ankylosis has occurred. A wrist stiff in flexion is useless—one in extension is surprisingly efficient.

**HYPERTROPHIC ARTHRITIS:** Obese individuals complaining of hip, knee, or ankle pain should reduce the load by diet, and by limiting the amount of work to which the joint is put. The housewife must avoid climbing stairs, and the husband who has lived by the strength of his back, must get someone younger to chop wood and carry ashes. I see no more reason for an arthritic patient not taking salicylates than a cardiac not taking digitalis. Night splints for painful joints do wonders. In the treatment of hypertrophic arthritis, two surgical procedures may be indicated; first, partialectomy for localized changes of the

patella and second, synovectomy of the knee when exploration reveals a marked synovial proliferation with little breakdown of the joint surface.

**BONE TUMORS:** Avoid combining radiation and surgery in the treatment of giant cell bone tumors.

**OSTEMOMYELITIS:** The treatment is full doses of sulfathiazole, adequate fluid, enriched diet, and supportive treatment for a septicemia. The painful part should be immobilized.

**LOW BACK PAIN:** For the acute pain strapping is good. An injection of an anesthetic (procaine) is worthwhile. Chronic cases are much relieved by plaster jackets.

**SHOULDER PAIN:** Have you ever seen a middle-aged woman holding her arm tightly at her side and complaining of deltoid pain and pain down the outside of the arm so bitterly that you suspected hysteria? A needle should be passed beneath the deltoid into the subdeltoid bursitis and several cc. of 1 per cent novocaine injected. The pain is relieved at once.—D. T. IMRIE, M. D., *Virginia Medical Monthly* for June 1943.

deaths and other agents leave no traces in the body. This is not offered with a view of suggesting a way for a perfect crime, for other corroborative factors may prove the perpetrator's undoing.—M. EDWARDS MARTEN, M.D., in *Med. Times*, Apr., 1943.

### Low Back Pain

Surgery is not the only curative treatment for low back pain. Low back pain, even accompanied by sciatica, is not always due to pathologic conditions in the spine or spinal cord. Every case should be thoroughly studied before one jumps to the conclusion that an alleged trivial injury, usually overlifting, which the patients may have performed dozens of times a day for years, is the cause of the low back pain. Patients with faulty posture are not cured by a back brace, corset, or sacroiliac belt.

#### Physical Therapy

Many low back conditions are treated by physical therapy. Disease or injury of the spinal column or the cord must be ruled out, at least one must be positive that the local condition will be benefited by physical therapy. When a thorough course of heat, massage, and corrective exercises for faulty posture is indicated to continue to treat a low back pain by only short wave, diathermy, or a heat lamp is to be condemned.

### X-Ray for Acute Lung Infections

Used alone, or in combination with chemotherapy, x-ray therapy has resulted in the lowest mortality rates yet attained in the treatment of pneumonia and other acute pulmonary infections. Technic: 185 kilovolt potential filtered by 0.5 mm. and 1 mm. aluminum at 50 cm. distance, using a 20x20 cm. cone, P.E. 250 r at each dose, at a rate of 25 r.m.—R. C. CURTIS, M.D., in *Texas S.J. Med.*, Apr. 1943.

### Causes of Sudden Death

After performing autopsies on 1,000 persons who died suddenly, these causes of sudden death were found: Chronic myocarditis, 34 percent; cerebral hemorrhage, 18 percent, coronary thrombosis, ruptured aneurysm and luetic aortitis, ruptured heart and acute chronic valvulitis 16 percent. Thus diseases of the heart and arteries cause two thirds of all sudden deaths.

Apoplexy occurred in every age group; a few cases were found in the teens, and 18 cases in the 18-30 year age group.

Seven percent of cases did not reveal any cause for death. It must be remembered that such conditions as epilepsy, heat stroke, snake venom, insulin, not a few of the psychoses, some allergic

### Heparin and Intraperitoneal Adhesions

Lehmann and Boys (*Surgery*, 1942, 12:236) report a new experimental use of heparin—in preventing intraperitoneal adhesions. They found, in 10 experiments on dogs, that heparin greatly decreased or entirely eliminated the reformation of mechanically formed adhesions after these had been separated. Lehmann and Boys believe that the clinical application of these findings in preventing intraperitoneal adhesions and in diminishing scar tissue is now justified.

The products we advertise are worthy of your attention. Look them over.

### Cooling for Burns

Cooling the burned patient controls pain, prevents infection, diminishes shock and decreases serum loss. In addition, the scar formed is pliable and soft, rather than hard and firm.—TEMPLE FAY, M.D., in *J.A.M.A.*, Mar. 27, 1943.

### Contraceptive Deterioration

The consistency of a contraceptive cream or jelly is an important factor in its effectiveness. Such a preparation, at body temperature, should have sufficient density to act as a barrier to the passage of spermatozoa. Its consistency should permit it to flow over the entrance of the cervical canal, yet should not allow it to escape from the vagina. It is of equal importance that such consistency be maintained during storage on the dealer's shelf and in the patient's home.

Samples of 57 jellies were secured

from contraceptive clinics and stored for 11 months, brought to room temperature and examined grossly and under the microscope. The examination was repeated at the end of 14 months. Temperatures used for storage were 24-28°C. (ordinary room temperature), cold (8°C.) and warm (37°C.). The table indicates the changes during storage. The physician and patient should assure themselves that the keeping qualities and freshness of the materials are such that the consistency will be proper at the time of use.—R. L. BROWN, M.D. in *J. Fertility*, Dec. 1943.

CHANGES IN JELLY CONSISTENCY DURING STORAGE

MATERIAL	STORAGE TEMPERATURE						MATERIAL	STORAGE TEMPERATURE						
	8°C.		24-28°C.		37°C.			8°C.		24-28°C.		37°C.		
	11 mos.	14 mos.	11 mos.	14 mos.	11 mos.	14 mos.		11 mos.	14 mos.	11 mos.	14 mos.	11 mos.	14 mos.	
Adelstein & Adelstein	o	o			F	F	Kross Jelly	o	F			F	F	
Almol	o	o	o	o	o	o	La-Bo-Jel	o	o			o	o	
Ander-Creme	S	S			S	D	Lactikol B.	o	o	o	F	F	F	
Borilactikol	o	F			o	F	L.A.J.	o	o	o	o	o	F	
Certane Cream	o	o			o	o	Lanteen Blue	o	o			o	o	
Certane Jelly	o	o	o	o	o	F	La Savoy	o	S			S	S	
Cervinol	o	o			F	F	Locorol	o	o	o	o	o	o	
Chloradium	o	o			o	o	Lyjel	o	o			o	o	
Clinicol	o	o			F	F	Marvosan Creme	o	o			o	o	
Contra Creme	o	o			o	D	Marvosan Jelly	o	o	o	F	F	F	
Cooper Creme	o	o	o	o	o	o	Medi-Phragm	o	o	o	o	o	S	
Creemoz	o	o			F		Nixon Creme	o	o			o	o	
Dependon Creme	S	D			S	D	Ortho Creme	o	o			o	o	
Dependon Jelly	o	o			o	F	Ortho-Gynol	o	o	o	o	o	o	
Drijelum	S	S			S	S	PreKonSol	S	S			S	S	
Fidelity	o	o			o	F	P.S. Cream	o	o	o	o	o	o	
Gela Creme	o	o			D		P.S. 5% Glycerine	o	o	o	F	o	F	
Gelakta	o	o			D		P.S. 25% Glycerine	o	o	o	o	S		
Gelaquin	o	o			D		Ramses	o	o	o	o	o	F	
Glyeuthymenol	o	o			D		Ritol Creme	S	S			S	S	
Gynojell	o	o			D		Safe-Creme	o	o			o	o	
Gyno-Quin	S	S			S	S	Safe-Je	o	o			o	S	
H-R Emulsion	o	S	S	S	S	S	Special Formula 543	o	o	o	o	o	o	
Hyva	o	o			o	S	Superjel	o	o	o	F	F	F	
Iatros Cream	S	S			S	D	Synthetic	o	o			S	S	
Jellak	o	o			o	F	Vagagill	o	o			o	o	
Koromex	o	S	S	S	S	S	Veritas Kreme	o	o	o	o	o	o	
Kross Cream	o	o			S	S	Verithol	o	o	o	F	F		
							Zoni Cream	o	o		o	o	D	

o = No marked changes noted.

F = Markedly increased fluidity with loss of "Jelly Quality."

S = Separation into solid and fluid portions.

D = Markedly decreased fluidity approaching solidification.



# DIAGNOSTIC POINTERS

## Recognition of Sinus Diseases in Children

- 1. Paranasal sinus infection in infants and children is an established entity and occurs at any age.
- 2. They are frequently brought to the physician for relief of a condition far removed from the nasal sinuses which may be the infective source.
- 3. The paranasal sinuses should be considered and studied in all diseases of unknown origin.
- 4. The focus of infection may still be present in the sinuses after removal of the tonsils and adenoids.
- 5. Infection retards the development of the paranasal sinuses.
- 6. In order of greatest clinical value are the maxillary sinuses, ethmoids, sphenoids and frontals.
- 7. There are three prominent symptoms in chronic sinusitis: nasal discharge, nasal stoppage, and lowered physical state of the patient.—S. Morwitz, M. D., in *E.E.N.T.M.*, Sept. 1943.

## Tenderness in Early Appendicitis

- When patients are seen within an hour or two of the onset of acute appendicitis, they will complain of epigastric pain which is aching and only moderately severe. At that time, the tenderness may be in the same location as the pain, i.e. the epigastrium. Later, the tenderness may be found in the right lower quadrant while the pain is still localized to the epigastrium.—R. W. POSTLETHWAIT, M.D. in *Mil. Surg.*, Nov. 1943.

## Esophageal Cancer Symptoms

- The sensations of esophageal cancer in the order of frequency are: fullness, pressure, burning, uncomfortable sense of constriction, sharp pain, prickling sensation, acid taste, aching and numbness over the chest. Two cases had pain referred to the ear. Substernal pain was complained of by others. There was always a rough but definite correlation of levels of lesion and pain.—*Med. World (Lond.)*, Aug. 20, 1943.

## Thyroid Extract in Myxedema

- If the administration of thyroid extract in a suspected case of myxedema results in vomiting, marked abdominal pain and collapse, one should suspect that the myxedema is of pituitary origin. Hypotension, hypoglycemia, amenorrhea and loss of libido are found in these patients.—M. G. WOHL, M.D., in *Med. Clin. N. Am.*, Nov. 1942.

## Testing for Drug Sensitivity

- It is difficult to test for drugs except clinically. Patch testing is not very accurate. The patient holds a tablet of the drug against the buccal mucosa for 10 to 20 minutes. The immediate reaction is one of edema and occasional vesicle formation. At the end of 24 hours, the site is again inspected for vesiculation. This method of drug testing is quick, fairly reliable and safe.—Philip Blank, M. D. in *Mil. Surg.*, Nov. 1943.

## Value of Agglutination Tests

- We have lost sight of the true concept of the agglutination test. It is not a diagnostic procedure, fundamentally, although it may be used as such under certain circumstances. It is an index of the response of the patient to establish immunity against a given infection. It is of definite value in cases of acute, self-limiting diseases (as typhoid) in which immunity is established or the host succumbs. In a chronic, prolonged illness like undulant (Malta) fever, in which the host is unable to develop sufficient antibodies to overcome the infection, we cannot always expect a positive agglutination.—H. J. SCHMIDT, M.D., in *New Orleans M. & S. J.*, Aug. 1943.

## Rectal Symptoms

- Any mild symptom that is sufficient to attract the patient's attention to his rectum may be symptomatic of cancer. In these patients, the first recognizable symptoms of their rectal cancers, in order of frequency, are blood in the stools, constipation, increase in flatus, diarrhoea, pain and mucous discharge. The importance of a rectal examination should never be overlooked.—*Med. World (Lond.)*, Aug. 20, 1943.

♦

- When a diagnostic help to the physician is absolutely harmless to the patient, it should absolutely be used whenever possible.—GRABER.



# THUMBNAIL THERAPEUTICS

## Painful, Non-Inflamed Appendix

• The appendix may be the cause of severe, colicky, abdominal pains, yet appear grossly and microscopically normal. The surgeon and pathologist usually feel that a normal appendix has been removed, yet many of these, on careful histologic study, will show neuromas. Physical examination, in such cases, may reveal tenderness, rigidity, and rebound tenderness. Nausea and vomiting may appear. The temperature tends to remain normal and the leukocyte and differential counts remain at normal levels. These patients are entirely relieved by appendectomy.—*Hawaii Med. J.*, Feb., 1943.

(This "neurogenic appendicitis" explains why many patients are relieved of abdominal pains by removal of an apparently normal appendix. Special stains are required to demonstrate neuromas.—Ed.)

## Thiamine for Tobacco Amblyopia

• Thiamine chloride (vitamin B<sub>1</sub>) treatment results in marked improvement in some cases of tobacco amblyopia.—*E.N.T.M.*, Apr. 1943.

## Vitamin C in Syphilis

• The use of vitamin C enhances the spirocheticidal effect of bismuth and the trypanosomicidal effect of antimony. With all other factors equal, the use of Bismuth Cevitamate\*, in addition to regular therapy, changed two thirds of Wassermann-fast patients to Wassermann negative.—S. L. RUSKIN, M.D. in *Am. J. Dig. Dis.*, May 1943.

## Conjunctivitis in Infants

• Inclusion conjunctivitis in infants tends to persist for several months. The use of 5 percent sulfathiazole or sodium-sulfathiazole ointment in the eyes three times daily, will often cure the conjunctivitis in four days.—*E.N.T.M.*, Mar. 1943.

## Tannic Acid for Throat Irritations

• Three drops of tannic acid dropped on a bit of hard peppermint candy and allowed to dissolve on the tongue an hour before meals stops hypersecretion of mucous and saliva, relieves tickling and cough. The spasmodic emptying of an esophageal diverticula is prevented.—E. E. NEFF, M.D., in *Med. Rec.*, May, 1943.

## Riboflavin for Photophobia

• Photophobia (pain on exposure of eyes to light), not due to inflammation, is relieved by riboflavin (vitamin B<sub>2</sub>).—*E.N.T.M.*, April 1943.

## Seasickness and Airsickness

• Despite prolonged study by the Navy, no worthwhile treatment of seasickness or airsickness has been found.—H. W. SMITH, M.D. in *Ky. Med. J.*, May 1943.

## Threatened Abortion

• Five 5 mg. tablets (25 mg. total) of silbestrol should be given every 15 minutes until the pain and bleeding stop, then two 5 mg. tablets every hour for six doses, then one 5 mg. tablet every hour for six doses and finally, 10 mg. every night until the eighth month. Such treatment may replace the corpus luteum (progesterone) therapy of threatened and habitual abortion, and premature labor.—K. J. KARNAKY, M.D. in *J.A.M.A.*, April 3, 1943.

## Lesions of the Nipple

• No lesion of the nipple should be diagnosed until at least one Wassermann test has been performed.—C. F. GESCHICKTER, M.D., in "Diseases of the Breast" (J. B. Lippincott Co., Publishers).

## Discharge From the Nipple

• Do not neglect to examine microscopically any discharge from the nipple. This is necessary to distinguish between blood and inspissated secretion.—C. F. GESCHICKTER, M.D., in "Diseases of the Breast" (J. B. Lippincott Co., Publishers).

# NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.

All that mankind has done, thought, gained, or been: it is lying, as in magic preservation, in the pages of books.—THOMAS CARLYLE

## REHABILITATION OF THE WAR INJURED

Doherty and Runes

REHABILITATION OF THE WAR INJURED: A Symposium. Edited by William Brown Doherty, M.D. and Dagobert D. Runes, Ph.D., New York: The Philosophical Library. 1943. Price, \$10.00.

This ideally timed series of monographs covers the wide field of remaking the war cripples, both mental and physical.

In neurology and psychiatry, the sequelae of head injuries are well presented and various aspects of head injury patients rehabilitation discussed—speech training, fitting the patient for society, central nervous system injury, malingering, and psychological reaction to injury.

Reconstructive and plastic surgery is well represented by many of the leading plastic and traumatic surgeons of our day (Sir Harold Gillies, Robert Ivy, Blair, Straith, Sheehan, James B. Brown, Kazanjian), who present their ideas on reconstruction operations. As in many plastic publications, before and after photographs are liberally shown and few surgical techniques are illustrated.

Amputations and their after care together with proper limb fitting are discussed by several orthopedists. Physical therapy, occupational therapy, vocational guidance, legal aspects of rehabilitation and foot injuries following prolonged exposure (immersion foot) are covered by a series of short articles.

This book contains much good material, but it is scattered throughout 700 pages of text. It is not short enough to be a synopsis nor long enough to give details of many of the methods suggested. The articles have been taken from various medical and surgical journals, which accounts for the lack of continuity and the fact that no one topic is thoroughly covered from all its important aspects. The book provides one with ready access to literature which might not be available, and can readily be used as an extra reference text on its subject.

## A MANUAL OF CARDIOLOGY

Dry

A MANUAL OF CARDIOLOGY. By Thomas J. Dry, M.A., M.B., Ch.B., M.S. (Med.). Illustrated. Philadelphia and London: W. B. Saunders Company. 1943. Price, \$3.00. This is the type of book that the general practitioner needs and welcomes. The important clinical facts concerning heart disease are given in a brief, usable way. Rare

diseases and rarely usable information are not allowed to clutter up the few essentials. If more specialists wrote books of this type, the standards of general practice could be raised readily.

Clinical pointers are found on almost every page. The first chapter comprises a discussion of the normal heart and fundamental considerations of heart disease in 8 pages of material that often is diluted to 40 or 50. Unless one knows the normal heart (or other organ), how is he to recognize the abnormal? One of the commonest, and most unfortunate, errors made in general practice is the refusal to positively pronounce a heart normal. Reason: Lack of assurance of physician, due to the tremendously complicated subject that cardiology is made out to be.

Chapter II concerns the features that must be known in order to make a diagnosis of heart disease. "The more effort it takes to produce dyspnea, the better is the prognosis, regardless of the pathologic condition causing the dyspnea. Good tolerance of exercise means good cardiac reserve whether heart disease is present or not."

Chapter III discusses cardiac murmurs, Chapter IV the abnormal pulsations helpful in diagnosis ("Venous distention of the neck veins indicates congestive failure, provided the distention is generalized"), Chapter V the alterations in cardiac size and contour ("The term enlargement is used because clinically it is impossible to estimate the degree to which either hypertrophy or dilatation is responsible for an increase in heart size"), and considers the various factors that may result in an apparent enlargement of the heart, Chapter VI the disturbances of normal cardiac action including ectopic beats and rhythms, and so on.

The little, pocket-size book is well printed and bound; it is dark in color and will not show soiling readily. Put it in your pocket or bag and read a few lines when you have a moment.

## ATLAS OF OBSTETRIC TECHNIC

Titus

ATLAS OF OBSTETRIC TECHNIC. By Paul Titus, M.D., Obstetrician and Gynecologist to the St. Margaret Memorial Hospital, Pittsburgh; Secretary, American Board of Obstetrics and Gynecology. Illustrations by Miss E. M. Shackelford, Medical Illustrator, the Hospital, St. Louis: The C. V. Mosby Co. 1943. Price, \$7.00.

The author has produced a very unusual book. With a minimum of reading matter and a maximum of large, clear illustrations, he drives home the points of technic in carrying out obstetric and surgical procedures during pregnancy and delivery.

The surgeon or obstetrician who wishes to review procedures before a complicated delivery, Cesarean section or laparotomy during pregnancy can see the various steps in technic and in many instances, the actual pathologic appearance of the ectopic pregnancy, ovarian cyst and so on. Sterility technic is also given, as is the proper method of treating the postpartum cervix and draining the infected breast.

The final illustration shows the method of obtaining local anesthesia for operations on the cervix by 4 injections (two laterally, one anteriorly and one posteriorly) of procaine solution. The two lateral injections are all that is needed to give anesthesia adequately, cervical amputation, deep electrocoagulation or dilatation and curettage (see Dogliotti's "Anesthesia," published by Debour Company, Chicago).

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